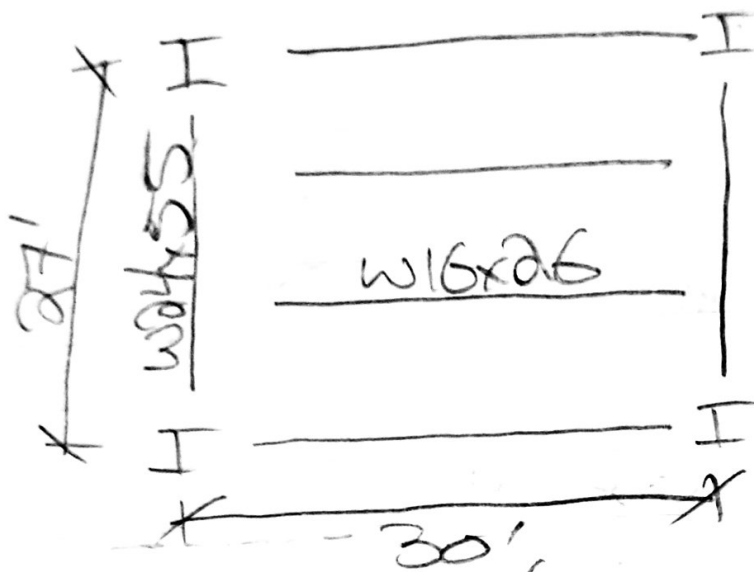


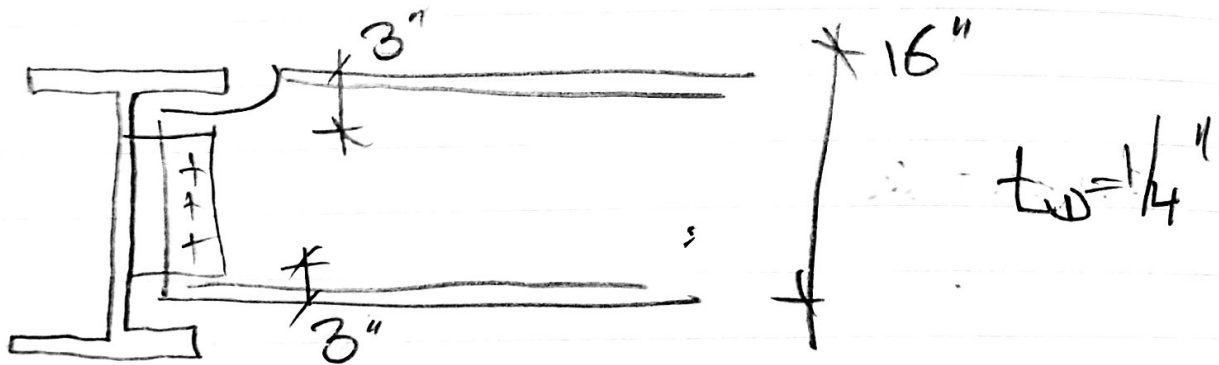
SIMPLE BEAM CONNECTION



$$N_u = 20^k$$

SIZE CONNECTION FROM W16 TO W24

USE $7/8"$ BOLTS AND USE TABLE 10-10a

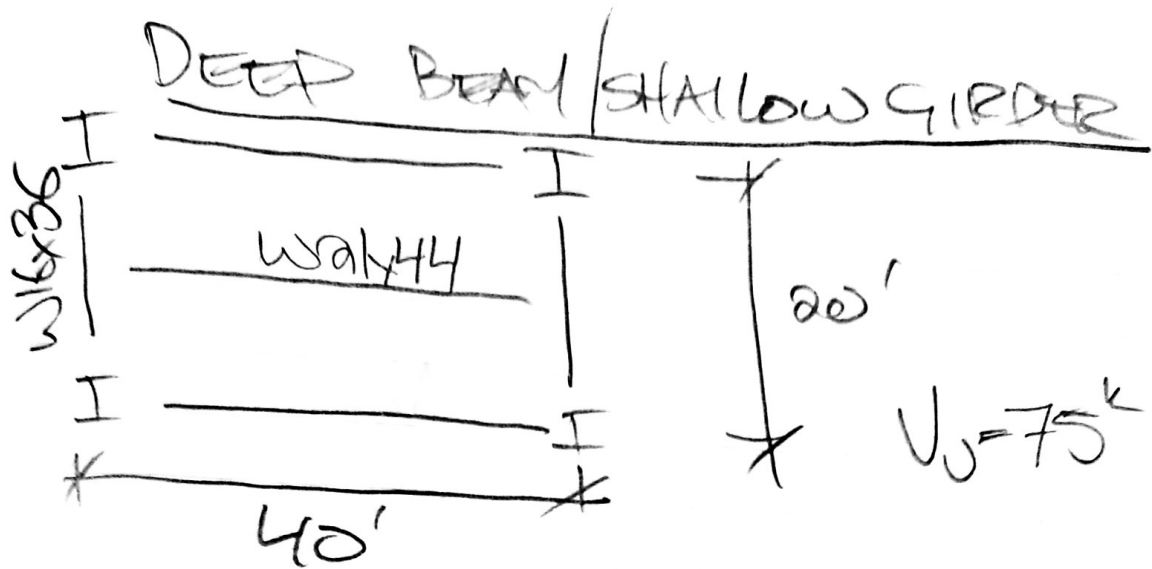


ASSUME ABOVE/BELOW TO PL

$$16' - 2 \times 3" = 10", \text{ SO } L = 9" \text{ INCHES (CLOSEST VALUE } < 10")$$

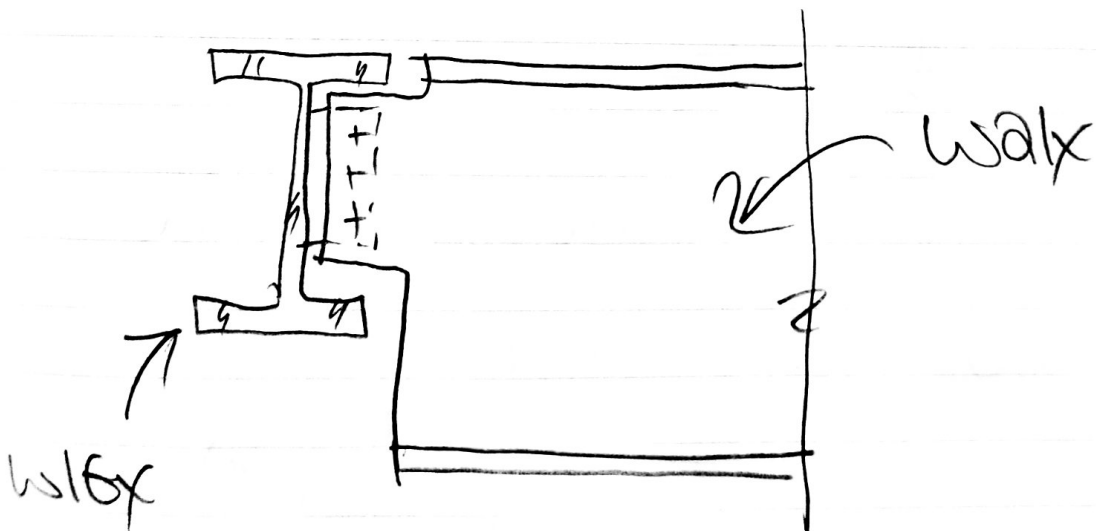
USE (3) BOLTS A305-N, STD $1/4"$ PL, $3/16"$ WELD $\Rightarrow \phi V_n = 39.2^k \checkmark$
 $t_p \geq t_w \checkmark$

IF $N_u > \phi V_n$ FOR $L = 9"$ ON ALL OPTIONS, CONSIDER UPSIZING BEAM DEPTH.



$21'' - 2 \times 3'' = 15''$ USE N=5 BOLTS
 TABLE 10-10a, $5/16''$ PL w/ $1/4''$ WELD
 HAS $\phi V_n = 81.6^k$ ok! ...

BUT DEEP BM SHALLOW GIRDER



CAN ONLY FIT (3) BOLTS!

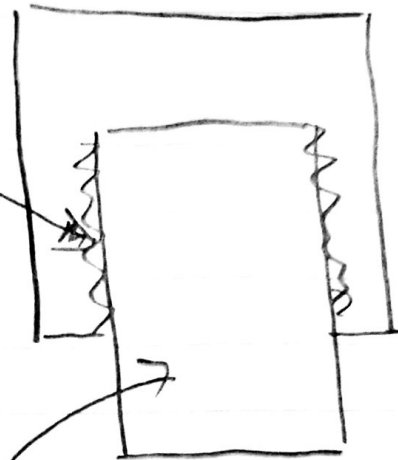
CONNECTION NG! USE GIRDER
~~DEPT.~~

WELD EXAMPLE

CAPACITY OF COIN?

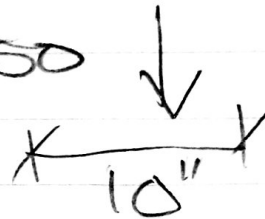
$$F_{EXX} = 70 \text{ ksi}$$

3/16" 10



1/4" PL
ASTM A36

$$U = 0.75 \text{ SINCE } L = W \text{ (FROM D3.1)}$$



$$R_{YIELD} = (0.9 \times 10" \times 1/4" \times 50 \text{ ksi}) (0.75)$$
$$\phi R_n = 84^k$$

$$WELD = \phi 0.6 F_{EXX} t_e L$$

$$= 0.75 \times 0.6 \times 70 \text{ ksi} \times (0.707 \times 3/16) \times 10 \times 2$$

$$= 83.5^k \Rightarrow \text{WELD JUST GOVERNS}$$

$$\text{ALT: } \phi R_n = 1.392 \times D \times L$$
$$= 1.392 \times 3 \times (10 \times 2) = 83.5$$

16TH 16TH